

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-119529

(43)Date of publication of application : 23.04.2002

(51)Int.Cl. A61F 7/02  
A61K 9/70

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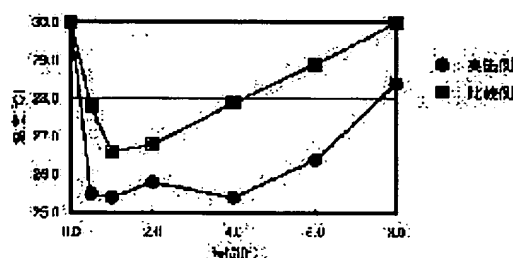
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## (54) BASE MATERIAL FOR COOLING PATCH

### (57)Abstract:

PROBLEM TO BE SOLVED: To provide a base material for a cooling patch which cools a lesion in an early period and is excellent in the duration of the cooling time.

SOLUTION: This base material for the cooling patch consists of two layers of hydrous pastes through a moisture permeation control film of 600 to 2,400 g/m<sup>2</sup>.hrs in moisture vapor transmission rate.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than

the examiner's decision of rejection or  
application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's  
decision of rejection]

[Date of requesting appeal against examiner's  
decision of rejection]

[Date of extinction of right]

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CLAIMS

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[Claim(s)]

[Claim 1] The base material for cooling patches which consists of a two-layer water plaster body through the moisture transparency control film.

[Claim 2] The base material for cooling patches according to claim 1 which has the moisture vapor transmission of the moisture transparency control film in the range of 600-2400 g/m<sup>2</sup> and 24hrs.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] About cooling patches, in more detail, this invention cools the affected part continuously and offers the base material for patches with which the high cooling effect is especially acquired by acute inflammation, such as a bruise and sprain.

[0002]

[Description of the Prior Art] Conventionally, cold sense cataplasms are used in order to cool the affected part, while they send a drug to the affected part. By the moisture in a plaster body vaporizing and taking heat from the skin, these cataplasms cool the affected part and apply a water plaster body to fiber base materials, such as a nonwoven fabric or textile fabrics. However, since the moisture permeability of a fiber base material is very high when such cataplasms are stuck on the skin of the affected part, perspiration is carried out for a short time, about [ that the cooling effect does not last long ] and a plaster body hardens, and there is a fault that the adhesion to the skin is no longer acquired.

[0003]

[Problem(s) to be Solved by the Invention] The method (JP,58-26888,B) of preparing the diaphragm layer which isolates the second layer containing the first layer which contains the approach (JP,5-38011,Y, JP,3-161435,A) and water retention component which combine a moisture permeability film with a base material as what solves such a fault, and an adhesion component and a drug effect component is proposed. However, the approach of combining the high fiber base material and moisture permeability film of moisture permeability is unsuitable for cooling the affected part at an early stage, and will be in the condition the plaster body layer which touches the skin "crowded together" by the approach of preparing a diaphragm layer into a plaster body, skin irritation increases, and pruritus and a rash may be caused.

[0004] This invention offers the base material for cooling patches which can maintain the cooling effect while being able to cool the affected part at an early stage.

[0005]

[Means for Solving the Problem] As a result of inquiring wholeheartedly that said technical problem should be solved, by preparing a water plaster body layer in both sides of the sheet which controls transparency of moisture, and controlling a moisture vaporization rate, this invention persons found out that the patches which can cool the affected part at an early stage, and can maintain a cooldown delay further were obtained, and completed this invention.

[0006] That is, the base material for cooling patches characterized by this invention consisting of a two-layer water plaster body through the moisture transparency control film is offered.

[0007] As moisture transparency control film used for this invention, high polymer films, such as a high polymer film which has moisture vapor transmission in range of 600-2400g/m<sup>2</sup> and 24hrs, for example, polyethylene, and polyethylene-vinyl acetate copolymer, polypropylene, a polyvinyl chloride, and polystyrene, are mentioned.

[0008] As a water plaster body basis of this invention, polyacrylic acid, sodium polyacrylate, Gelatin,

casein, a pullulan, a dextran, sodium alginate, Soluble starch, carboxy starch, a dextrin, a carboxymethyl cellulose, Carboxymethylcellulose sodium, methyl cellulose, ethyl cellulose, Hydroxyethyl cellulose, polyvinyl alcohol, polyethylene oxide, Polyacrylamide, a polyvinyl pyrrolidone, a carboxyvinyl polymer, It can use combining one sort of the hydrophilic polymer of composition of polyvinyl ether, a polymer lane acid copolymer, a methoxy ethylene maleic-anhydride copolymer, an isobutylene maleic-anhydride copolymer, polyethyleneimine, etc., or a semisynthesis, or two sorts or more. In addition, it is characterized by 10 - 1000 mPa.s of 1% viscosity of this plaster body basis being in the range of 20 - 700mPa.s preferably. Moreover, it may be 50 % of the weight or more preferably 40 % of the weight or more of moisture contents in a plaster body.

[0009] Furthermore, as for pH of the water plaster body of this invention, it is desirable to consider as the range of 3.5-7.0 in respect of skin irritation, and it is the range of 4.0-6.5 more preferably.

[0010] Non-steroidal anti-inflammatory drugs, such as mefenamic acid, dichlofenac, fenbufen, indomethacin, ketoprofen, flurbiprofen, phenylbutazon, piroxicam, and NIMESURADO, carpronium chloride, nicotinic-acid benzyl, a sialid extract, the Panax schinseng extractives, vitamin-E acetate, capsicum tincture, menthol, mentha oil, camphor, adenocorticotrophic hormone, etc. can be blended with the cooling patches of this invention as a drug effect component.

[0011] Moreover, basis components, such as lower alcohol (a methanol, ethanol, isopropanol), fatty acid ester (adipic-acid diisopropyl, myristic-acid isopropyl, etc.), polyhydric alcohol (1, 3-butylene glycol, propylene glycol, a polyethylene glycol, glycerol, etc.), a medium-chain-fatty-acid triglyceride, various vegetable oil, various animal oil, hydrocarbons, a surfactant, emulsion stabilizer, a gelling agent, a binder, a keratolytic drug, a moisturizer, a germicide, an anti-oxidant, perfume, and coloring matter can be blended with the cooling patches of this invention in the range which do spoil the effectiveness of this invention if needed

[0012]

[Effect of the Invention] It becomes possible for the cooling patches of this invention to cool the affected part at an early stage, and to maintain a cooldown delay further.

[0013]

[Example] Although an example is given to below and this invention is explained to a detail, thereby, this invention is not limited.

[0014] The silicic acid anhydride 1.6 weight section is added in the example 1 polyacrylic-acid 7.6 weight section, and the water 70 weight section is added and it dissolves. To this NIKKORU TS 10 The 0.3 weight section, the dl-menthol 1.6 weight section, The vitamin-E acetic-ester 0.3 weight section, the salicylic-acid glycol 1.1 weight section, the ethylenediaminetetraacetic acid sodium 0.05 weight section and the p-aminobenzoic-acid ethyl 0.01 weight section -- doubling -- warming -- dissolved liquid -- the mentha oil 0.3 weight section -- The glycerol 5.4 weight section, the sodium polyacrylate 3.2 weight section, After having added the polyvinyl-pyrrolidone 0.3 weight section, the titanium oxide 2.2 weight section, and the aluminum-hydroxide magnesium 0.3 weight section, having mixed, adding water and considering as all the 100 weight sections, it mixed further and considered as the plaster body for cataplasms. A polyester nature releasing paper and moisture vapor transmission spread the above-mentioned water plaster body by the thickness of about 2mm, respectively on the sheet made from polyester of 1200g/m<sup>2</sup> and 24hrs (Kurashiki textile finishing: NT60). Two sorts of these plaster bodies were stuck in order of the releasing paper, the plaster body, the sheet, and the plaster body from the bottom, and the nonwoven fabric made from polyester (Kureha tech: 839) was stuck on lamination and the maximum top face. Then, it judged in predetermined magnitude and patches were obtained.

[0015] After spreading the plaster body used in the example example 1 of a comparison by the thickness of about 4mm to the releasing paper made from polyester, the nonwoven fabric made from polyester (Kureha tech: 839) was stuck on a releasing paper and the opposite side. Then, it judged in predetermined magnitude and patches were obtained.

[0016] The sample (5x12cm) of an example 1 and the example of a comparison was stuck behind [ which was reading-in-the-Japanese-pronunciation-ized in the interior of a room controlled by 125 degrees C of examples of a trial, and 50% of relative humidity ] the test subject. Skin temperature was

measured with time using the thermography (JEOL: thermostat viewer 6300), and the cooling effect was compared. The result is shown in drawing 1 .

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